

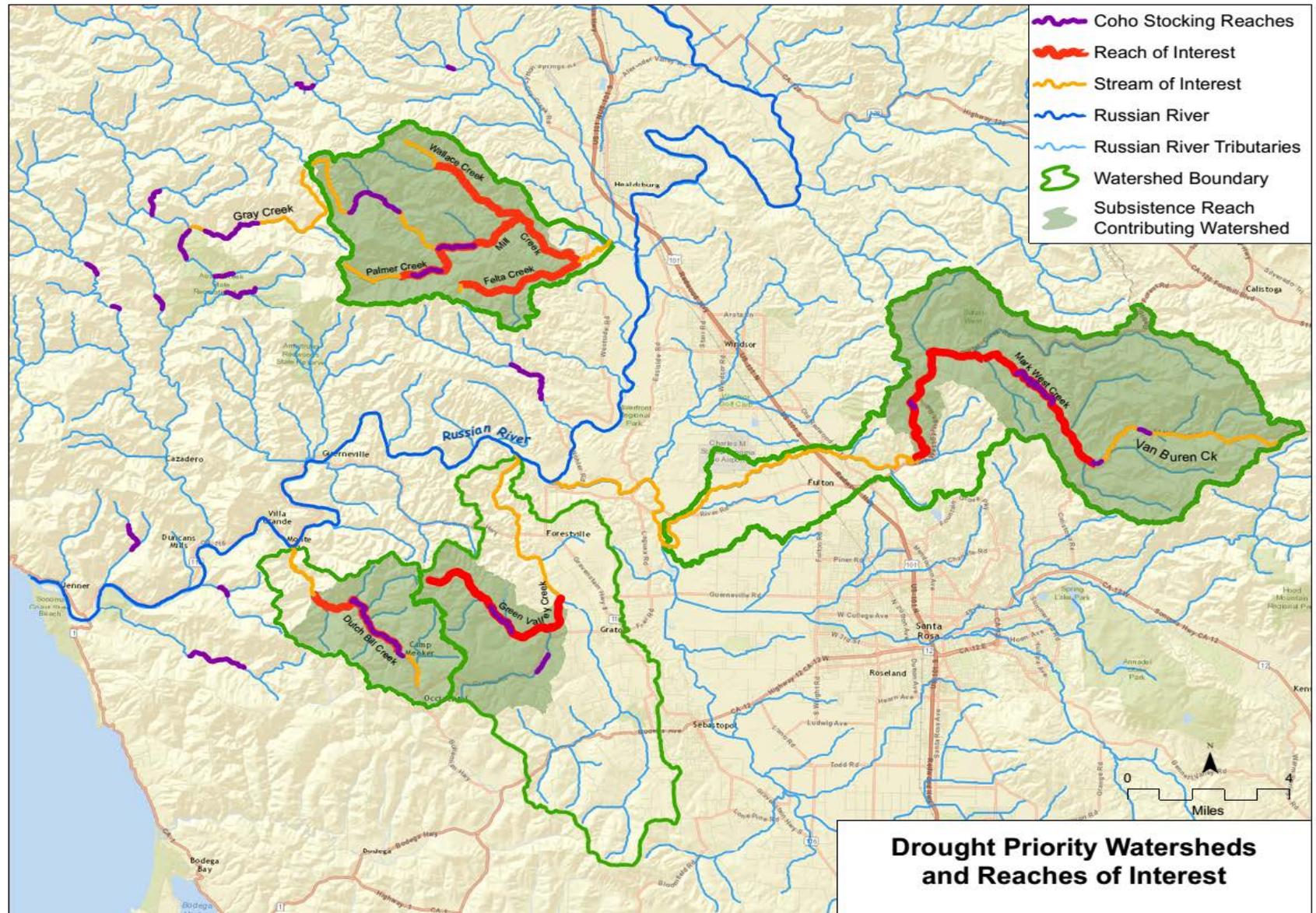
Status of Coho Salmon in the Priority Russian River Tributaries Drought Update January 28, 2016



Corinne Gray, Senior Environmental Scientist (Specialist)
California Department of Fish and Wildlife
Bay Delta Region



Russian River Priority Watersheds



Drought Priority Watersheds and Reaches of Interest

Voluntary Drought Agreements in the 4 Tributaries

We have received:

- 35 Residential Conservation VDI's
- 7 Winery/ Vineyard Conservation VDI's

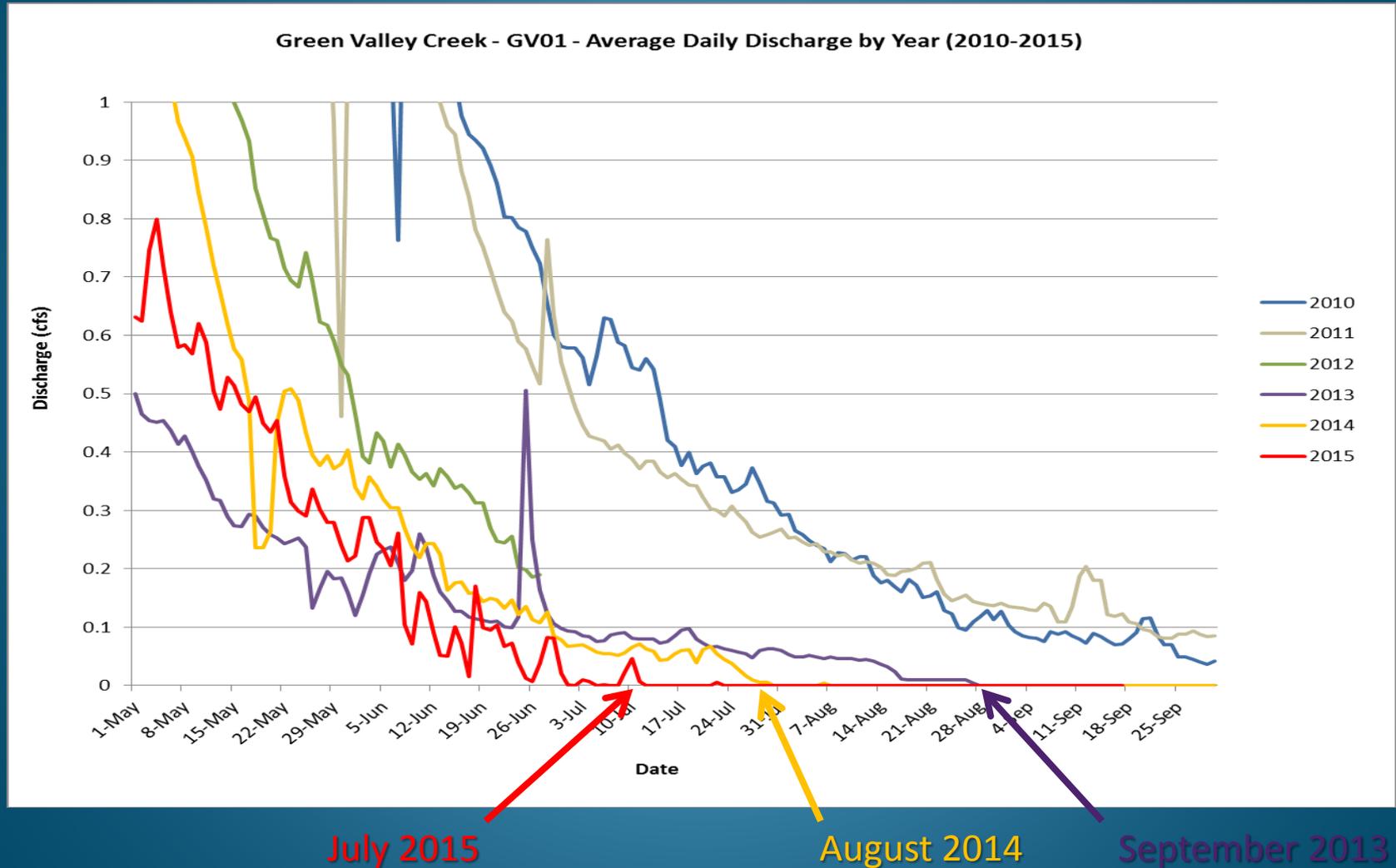


We have also signed:

- 3 Flow Enhancement VDI's for Green Valley Creek
- 2 Flow Enhancement VDI's for Dutch Bill

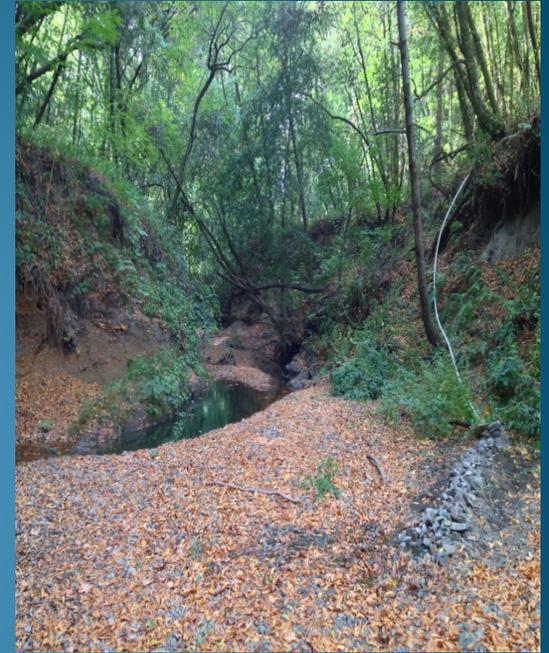
In addition, 71 winegrape growers representing 1,900 acres of vineyard pledged to reduce water demand by 25 percent.

Green Valley Creek Flow (2010-2015)



Green Valley Creek Flow Enhancement Projects

- Several Flow Enhancement VDI's were signed in Green Valley Creek
 - Jackson Family Wines
 - Chris Panym/ Michael Paine
- All committed to releasing water into Green Valley Creek **through November** or until flows are restored from rainfall events
- **Partners** included: Jackson Family Wines, Chris Panym, Michael Paine, Bob and Dianne Gianni, ARCG, the Gold Ridge Resource Conservation District, Trout Unlimited, the Occidental Arts and Ecology Center, the Russian River Coho Salmon Captive Broodstock Program, the State Water Resources Control Board, the North Coast Regional Water Quality Control Board, CDFW and NMFS



Bones Lane release Site

Green Valley Flow Enhancement Projects

Surface Flow Condition: 8/21/2015



Release

Russian River Coho Broodstock Program

	Dry Riffle		Wet Reach
	Dry Reach		Wet Pool
	Intermittent		Not Surveyed

Projection: NAD 1983 UTM zone 18U

Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streams Layer (County of Sonoma)

Map Prepared By: Andrew Bartshire, California Sea Grant

Map Name: 2015_LowFlow_Cori_Template Date Printed: 10 06 15

Green Valley Creek

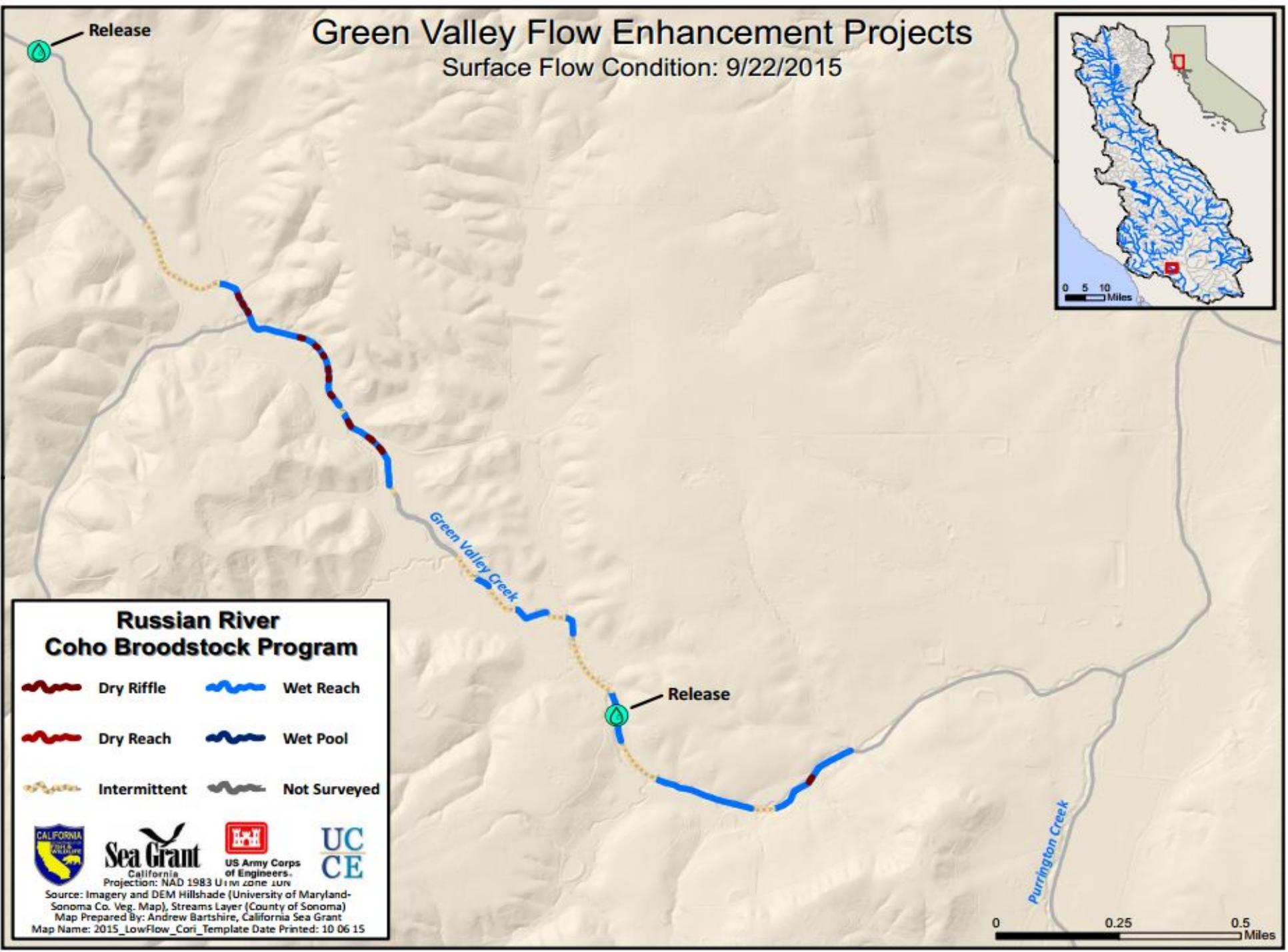
Release

Purrington Creek



Green Valley Flow Enhancement Projects

Surface Flow Condition: 9/22/2015

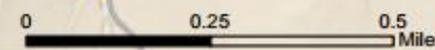


Russian River Coho Broodstock Program

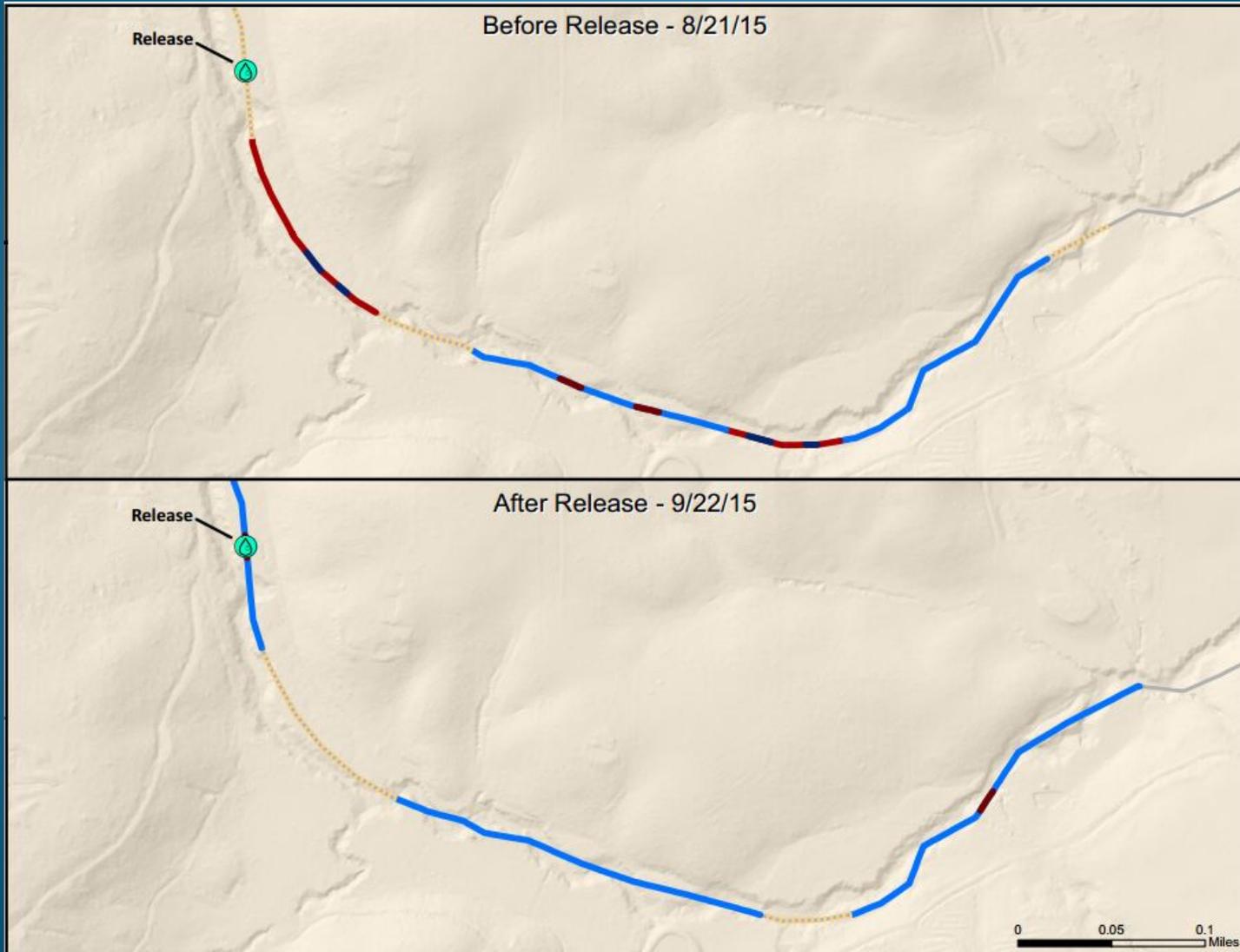
-  Dry Riffle
-  Wet Reach
-  Dry Reach
-  Wet Pool
-  Intermittent
-  Not Surveyed



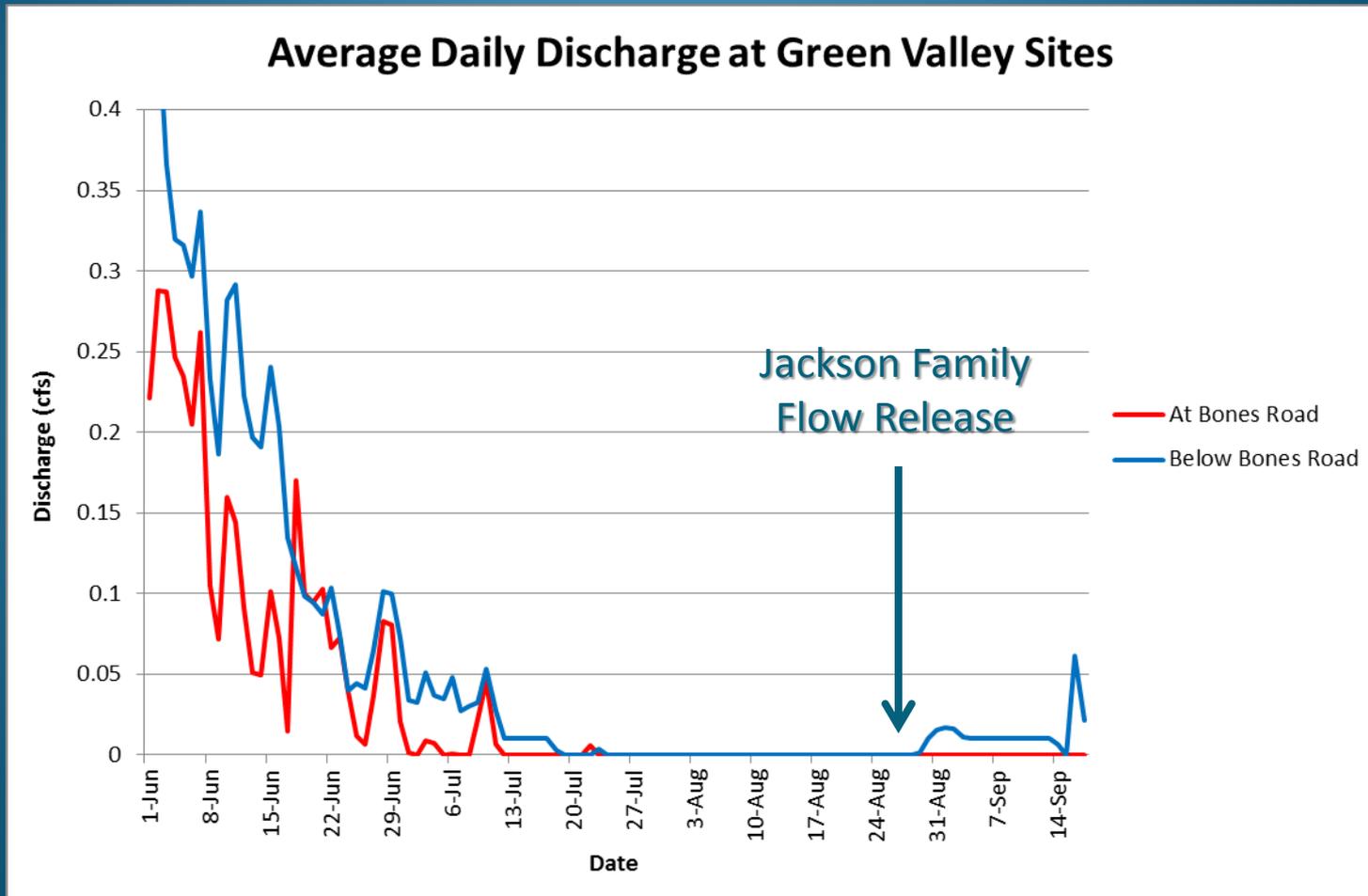
Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streams Layer (County of Sonoma)
Map Prepared By: Andrew Bartshire, California Sea Grant
Map Name: 2015_LowFlow_Cori_Template Date Printed: 10 06 15



Bones Lane Release Before and After

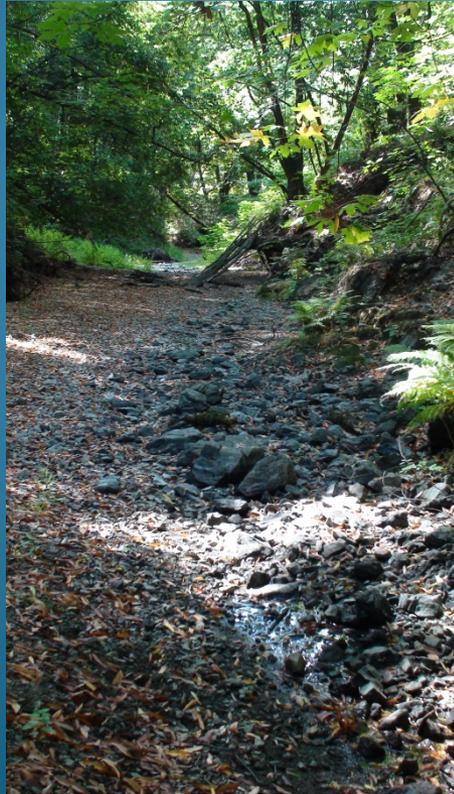


Bones Lane Hydrograph above and below Jackson release point



Bones Lane – Downstream Reach

Before



After

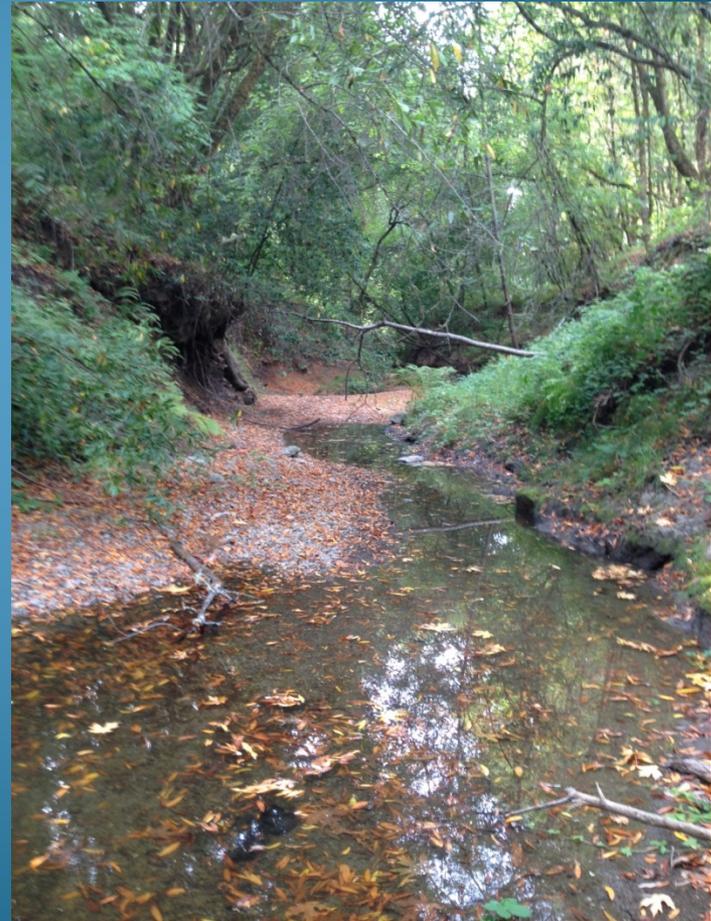


Bones Lane – Upstream Reach

Before

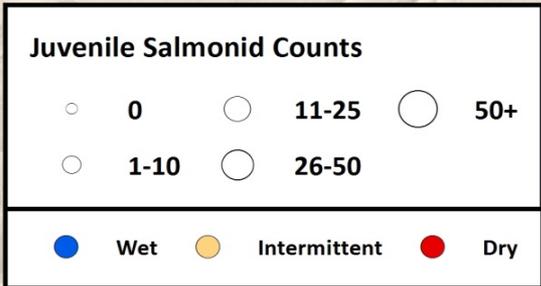
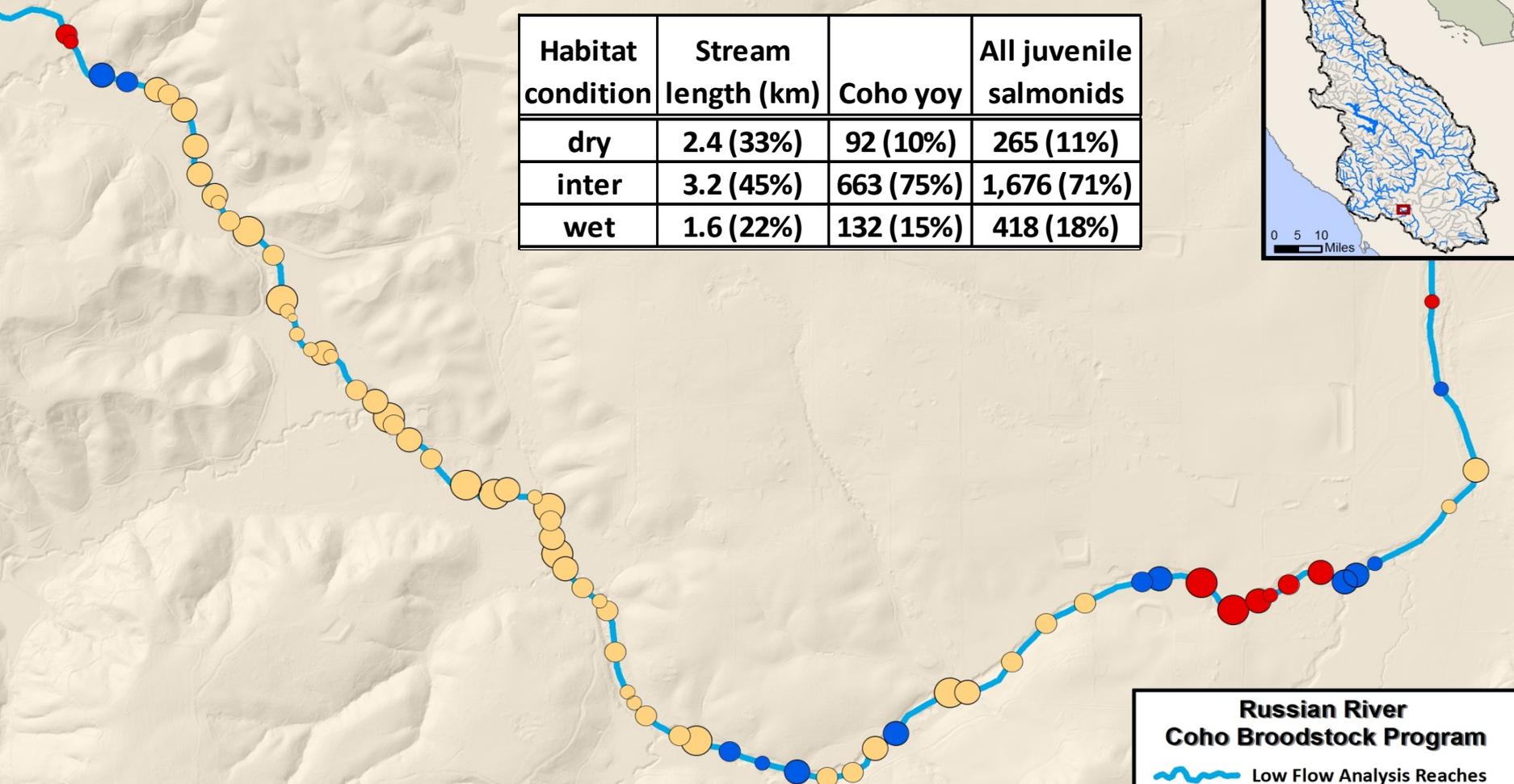
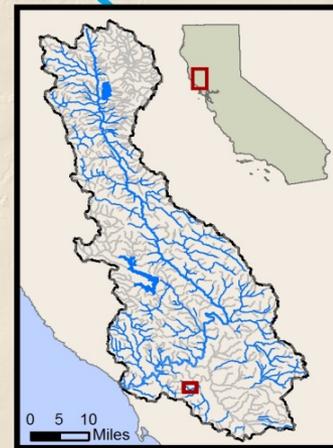


After



Green Valley Creek Juvenile Salmonids 2015

Habitat condition	Stream length (km)	Coho yoy	All juvenile salmonids
dry	2.4 (33%)	92 (10%)	265 (11%)
inter	3.2 (45%)	663 (75%)	1,676 (71%)
wet	1.6 (22%)	132 (15%)	418 (18%)



Russian River Coho Broodstock Program

Low Flow Analysis Reaches

No Low Flow Data

0 0.125 0.25 Miles

CALIFORNIA STATE UNIVERSITY OF MARINE SCIENCES
Sea Grant
CALIFORNIA US Army Corps of Engineers
UC CE

Projection: NAD 1983 UTM Zone 10N
Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streamshade (County of Sonoma)
Map Prepared By: Andrew Bartshire, California Sea Grant
Map Name: LowFlow_SS_SN_Template Date Printed: 10 26 15

Dutch Bill Creek Flow Enhancement Projects

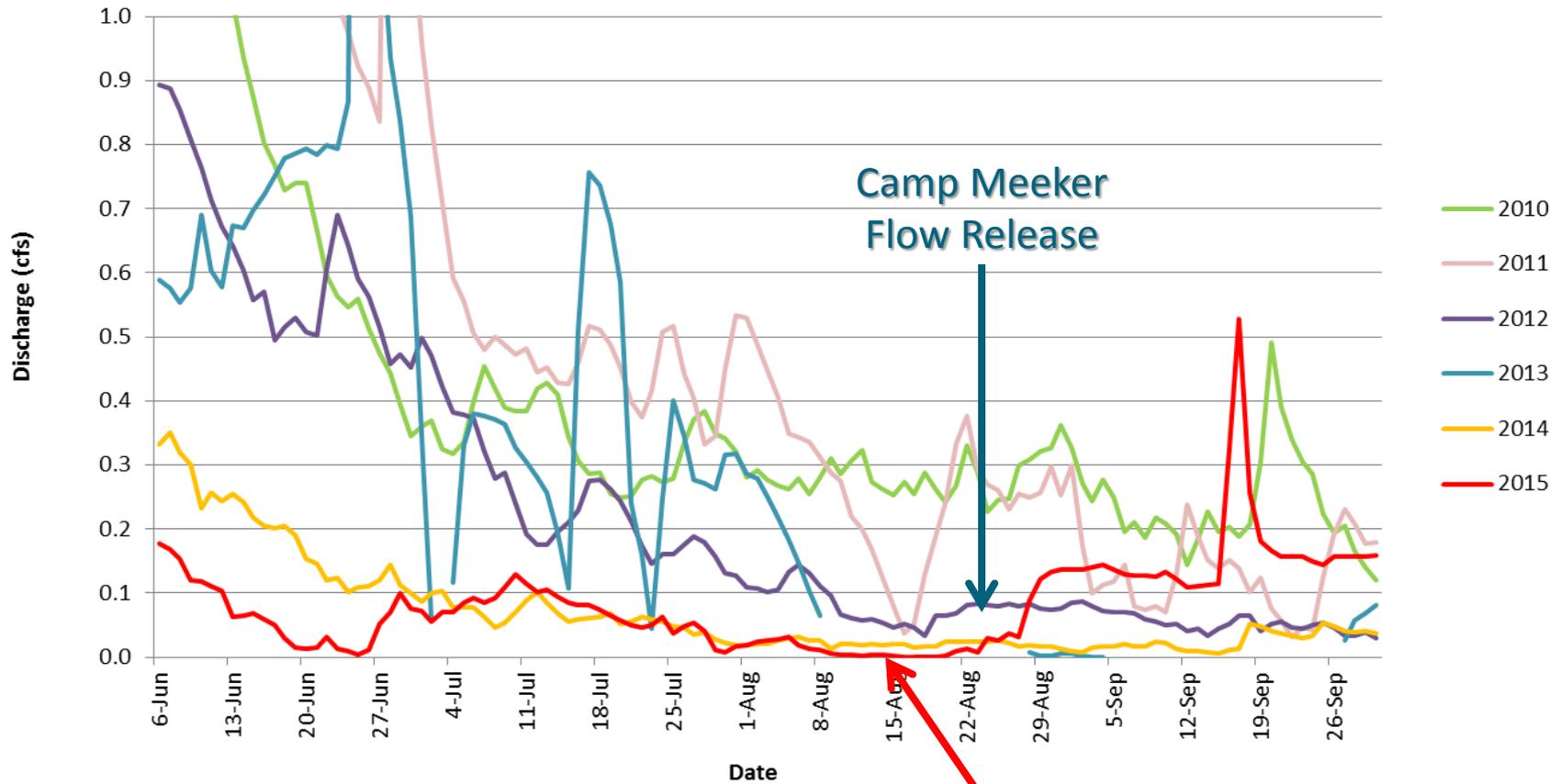
- Camp Meeker Recreation and Parks District (CMRPD) volunteered to enhance critically low summer flows in Dutch Bill Creek to protect coho salmon by releasing raw water from its water supply pipeline **continuously through November** or until flows are restored from rainfall events.
 - Approximately 3,400 juvenile coho salmon and steelhead were likely to perish
 - Flow augmentation was initiated on August 25 at a rate of 45 gallons per minute (gpm)
- St Dorothy's Rest also signed a VDI to release water from an existing reservoir in Upper Dutch Bill Creek
- **Partners** include: CMRPD, St. Dorothy's Rest, ARCG, the Gold Ridge Resource Conservation District, Trout Unlimited, the Occidental Arts and Ecology Center, the Russian River Coho Salmon Captive Broodstock Program, the State Water Resources Control Board, the North Coast Regional Water Quality Control Board, CDFW and NMFS



Brock Dolman, from the Occidental Arts and Ecology Center, displays the release of water into Dutch Bill Creek

Dutch Bill Creek Flow (2010-2015)

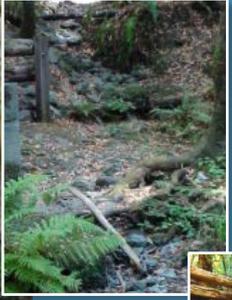
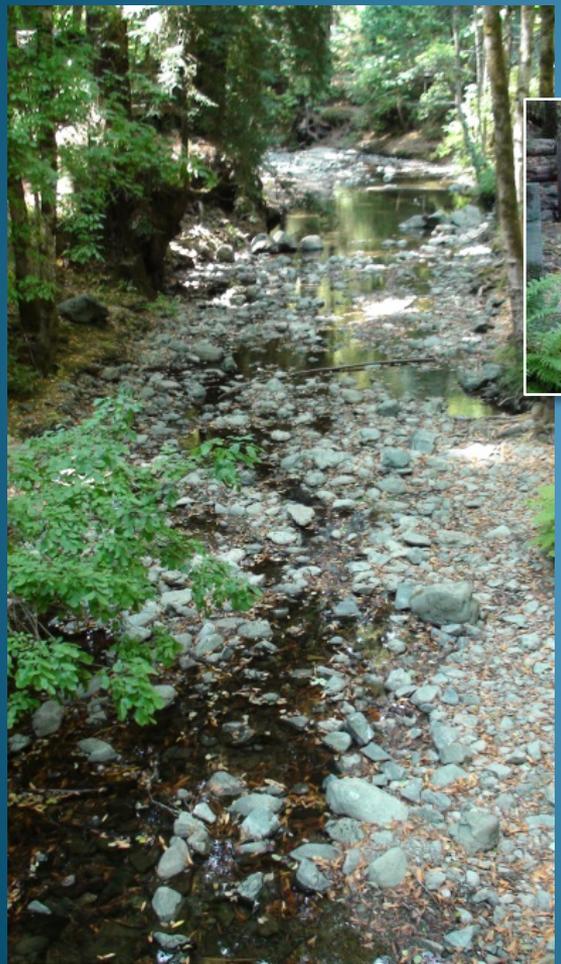
Dutch Bill Creek - DB02 - Average Daily Discharge by Year (2010-2015)



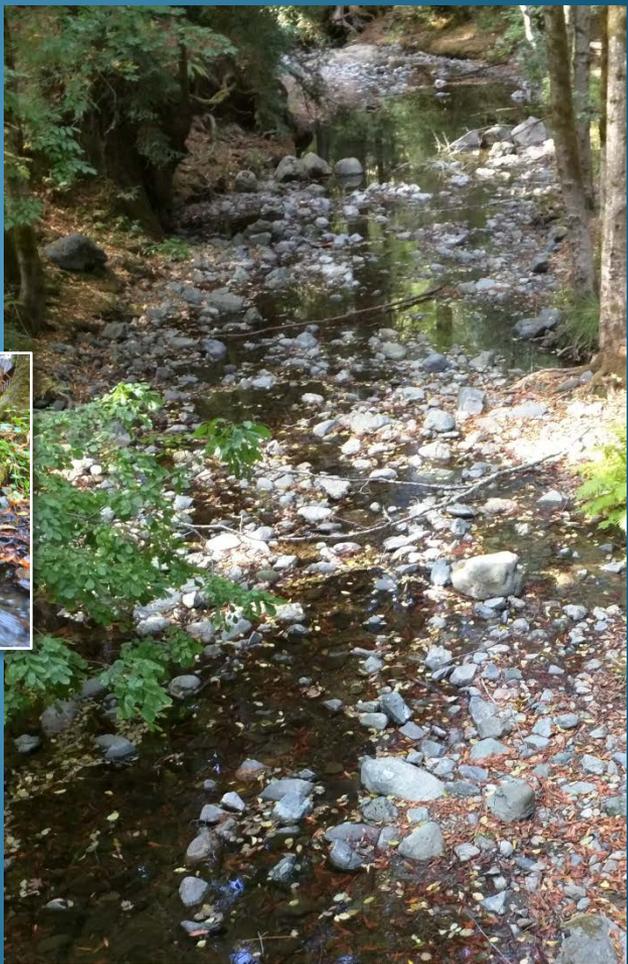
August 2015

Camp Meeker

Before



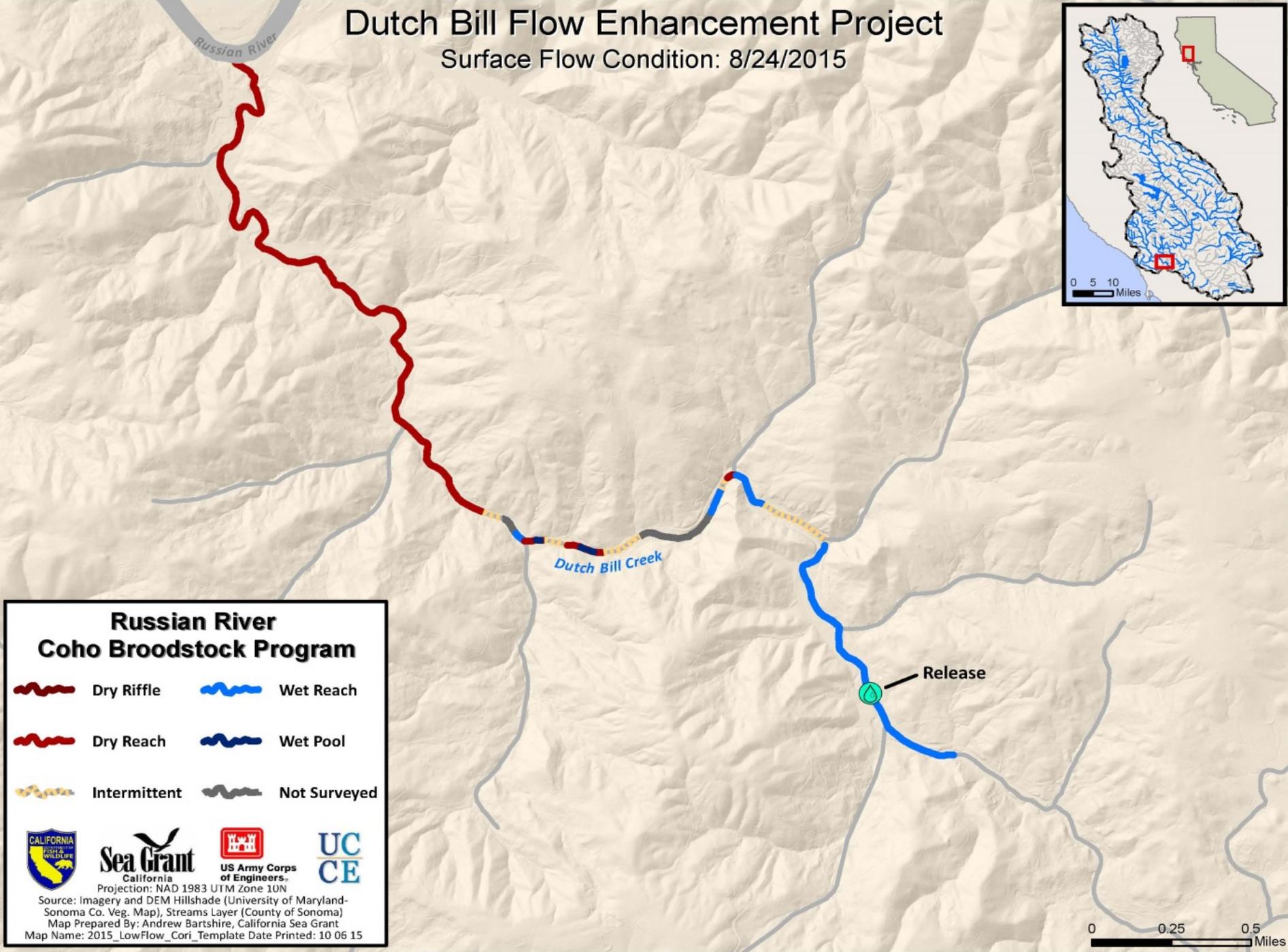
After



← Point of Flow Input

Dutch Bill Flow Enhancement Project

Surface Flow Condition: 8/24/2015



Russian River Coho Broodstock Program

- | | | | |
|--|--------------|---|--------------|
|  | Dry Riffle |  | Wet Reach |
|  | Dry Reach |  | Wet Pool |
|  | Intermittent |  | Not Surveyed |



Projection: NAD 1983 UTM Zone 10N

Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streams Layer (County of Sonoma)

Map Prepared By: Andrew Bartshire, California Sea Grant

Map Name: 2015_LowFlow_Cori_Template Date Printed: 10 06 15

0 0.25 0.5 Miles

Dutch Bill Flow Enhancement Project

Surface Flow Condition: 9/14/2015

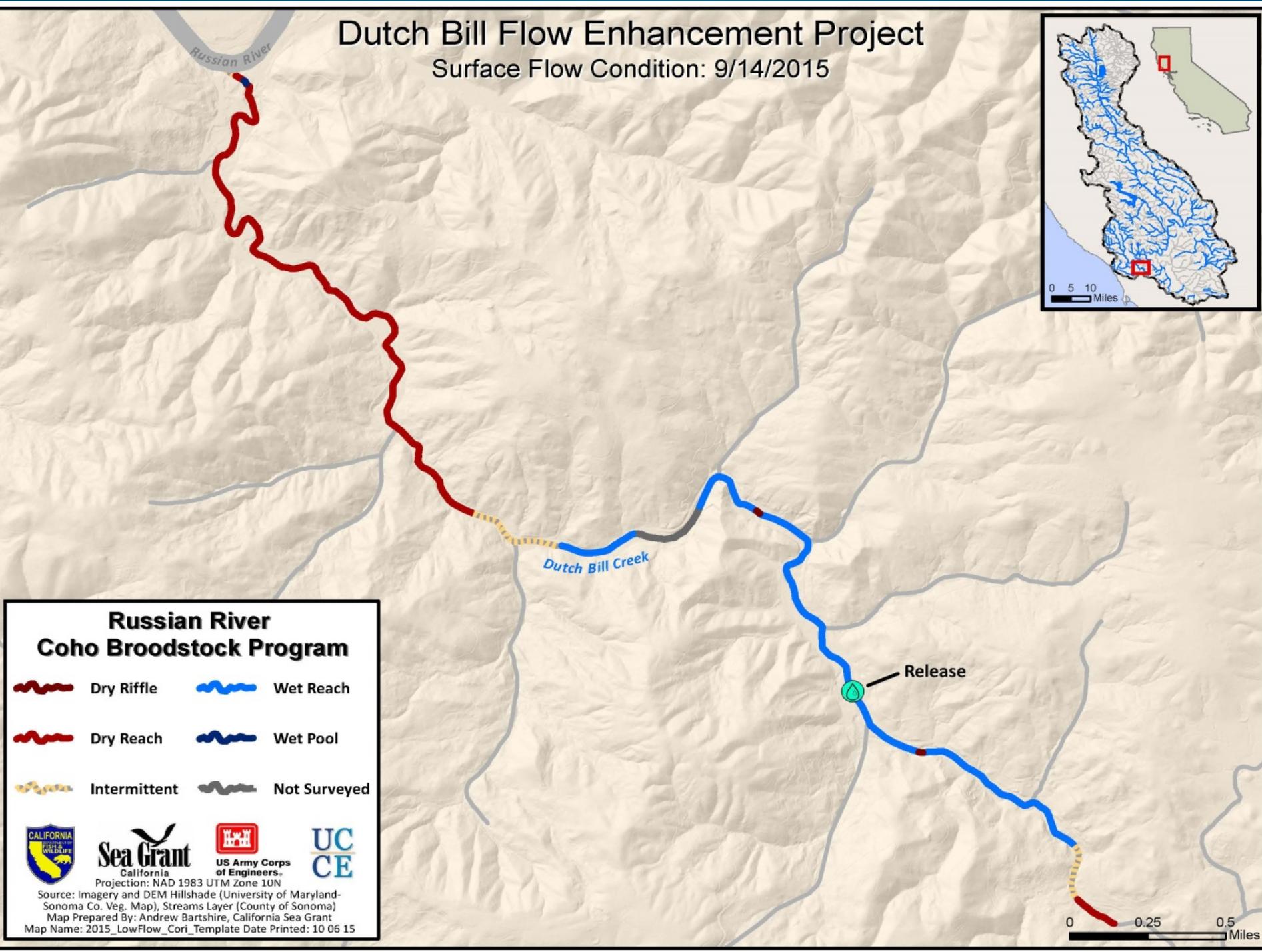


Russian River Coho Broodstock Program

	Dry Riffle		Wet Reach
	Dry Reach		Wet Pool
	Intermittent		Not Surveyed

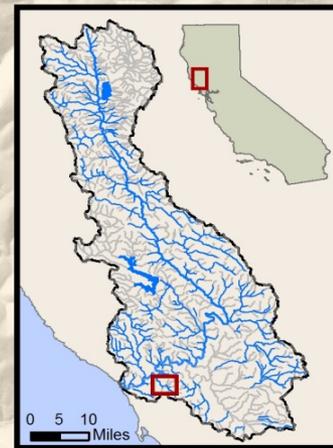
   

Projection: NAD 1983 UTM Zone 10N
Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streams Layer (County of Sonoma)
Map Prepared By: Andrew Bartshire, California Sea Grant
Map Name: 2015_LowFlow_Cori_Template Date Printed: 10 06 15



Dutch Bill Creek Juvenile Salmonids 2015

Habitat condition	Stream length (km)	Coho yoy	All juvenile salmonids
dry	3.9 (45%)	86 (24%)	161 (17%)
inter	1.0 (11%)	0 (0%)	65 (7%)
wet	3.8 (44%)	275 (76%)	719 (76%)



Russian River Coho Broodstock Program

Low Flow Analysis Reaches

No Low Flow Data

0 0.25 0.5 Miles

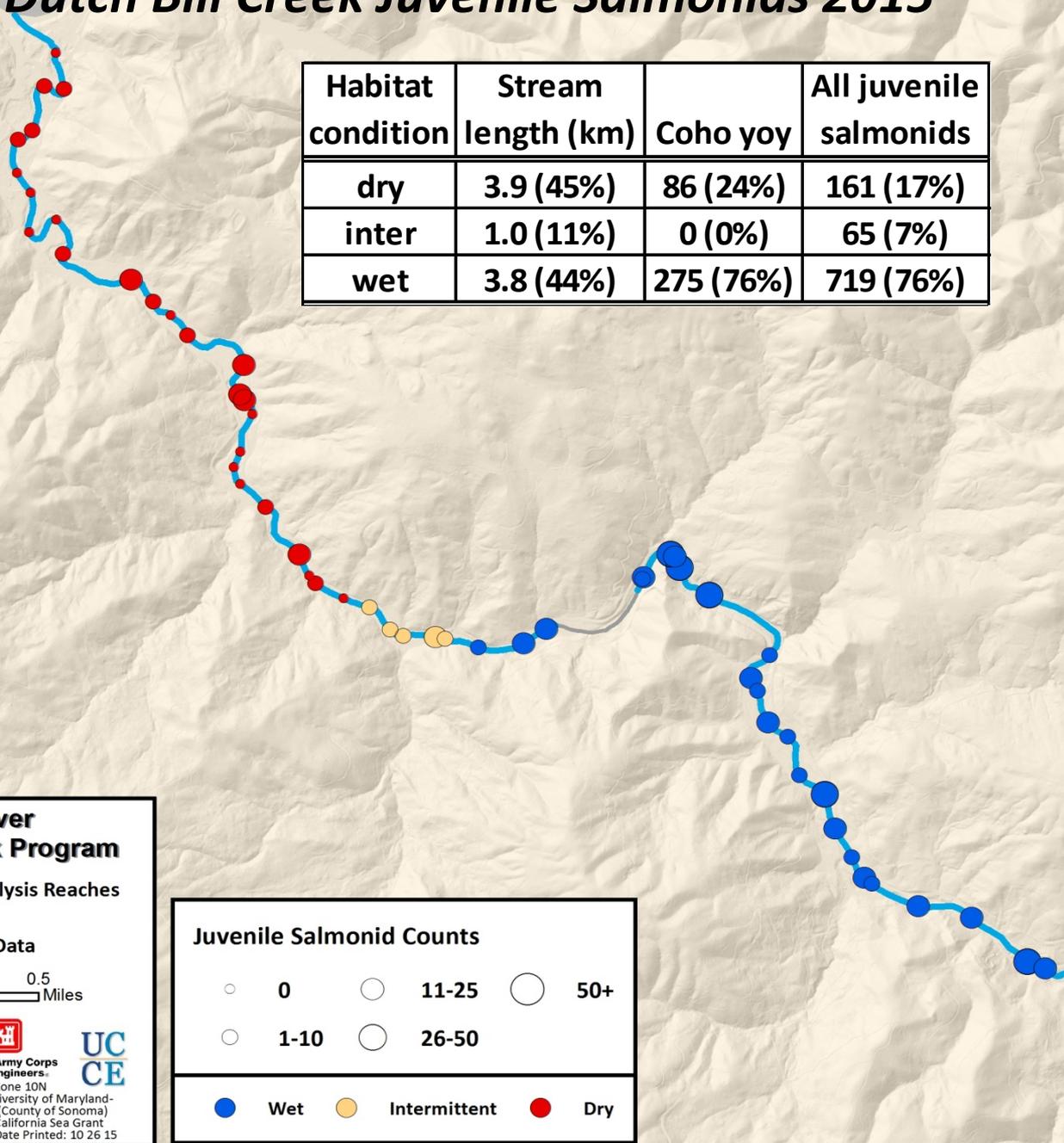
Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streams Layer (County of Sonoma)
 Map Prepared By: Andrew Bartshire, California Sea Grant
 Map Name: LowFlow_SS_SN_Template Date Printed: 10 26 15

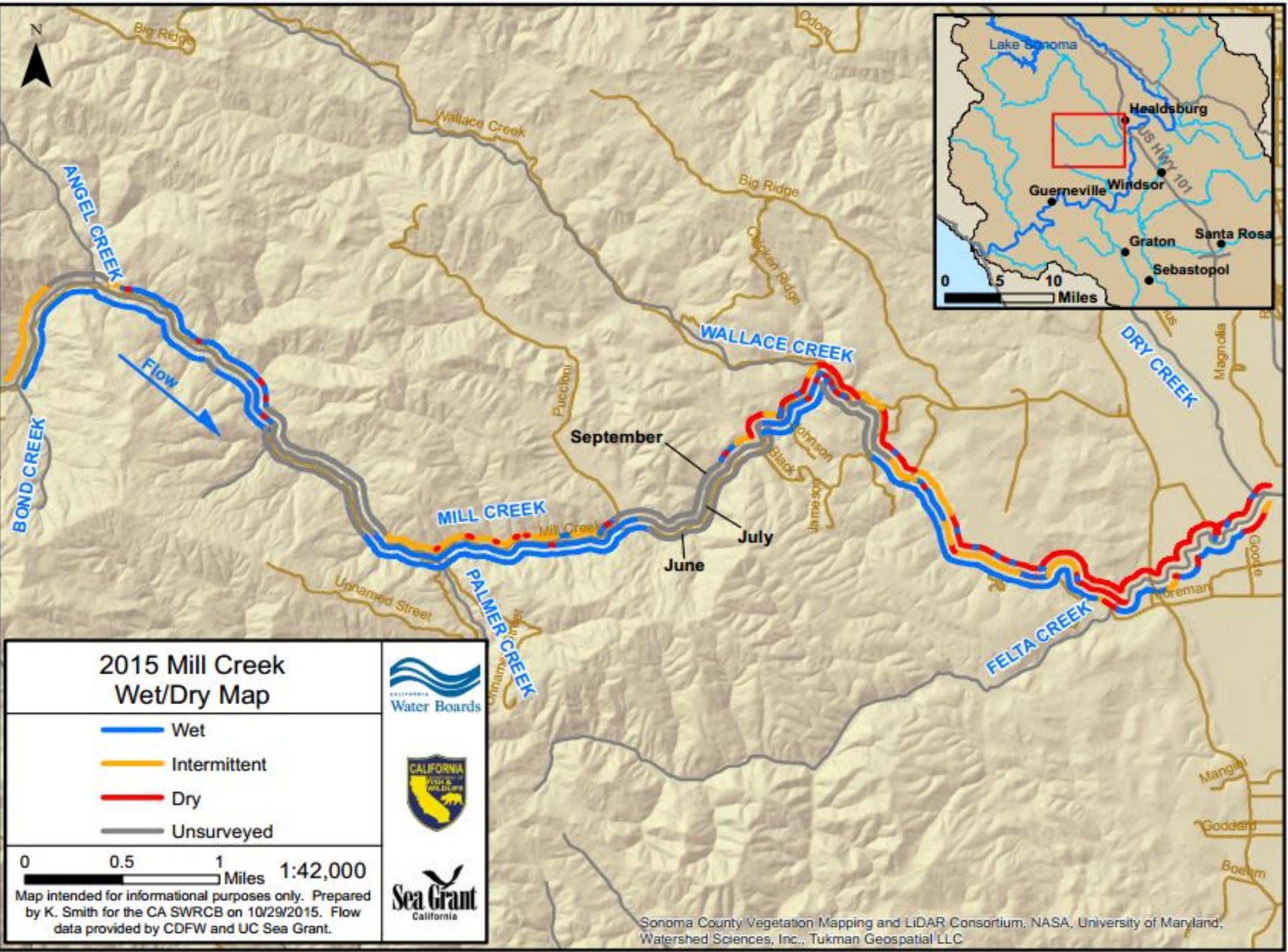
Juvenile Salmonid Counts

○ 0 ○ 11-25 ○ 50+

○ 1-10 ○ 26-50

● Wet ● Intermittent ● Dry





2015 Mill Creek Wet/Dry Map

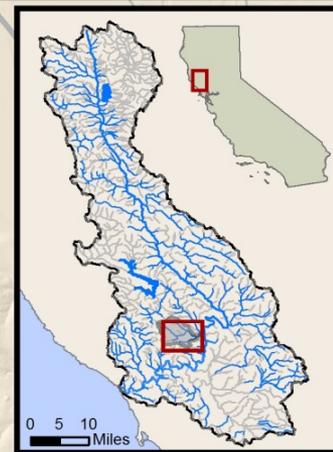
- Wet
- Intermittent
- Dry
- Unsurveyed

0 0.5 1 Miles 1:42,000

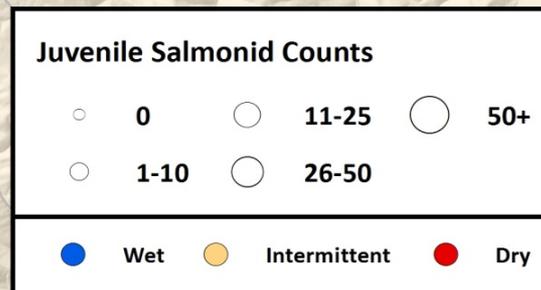
Map intended for informational purposes only. Prepared by K. Smith for the CA SWRCB on 10/29/2015. Flow data provided by CDFW and UC Sea Grant.



Mill Creek Juvenile Salmonids 2015



Habitat condition	Stream length (km)	Coho yoy	All juvenile salmonids
dry	10.0 (55%)	121 (76%)	2,000 (68%)
inter	3.1 (17%)	20 (13%)	467 (16%)
wet	5.1 (28%)	19 (12%)	463 (16%)



Russian River Coho Broodstock Program

~~~~~ Low Flow Analysis Reaches

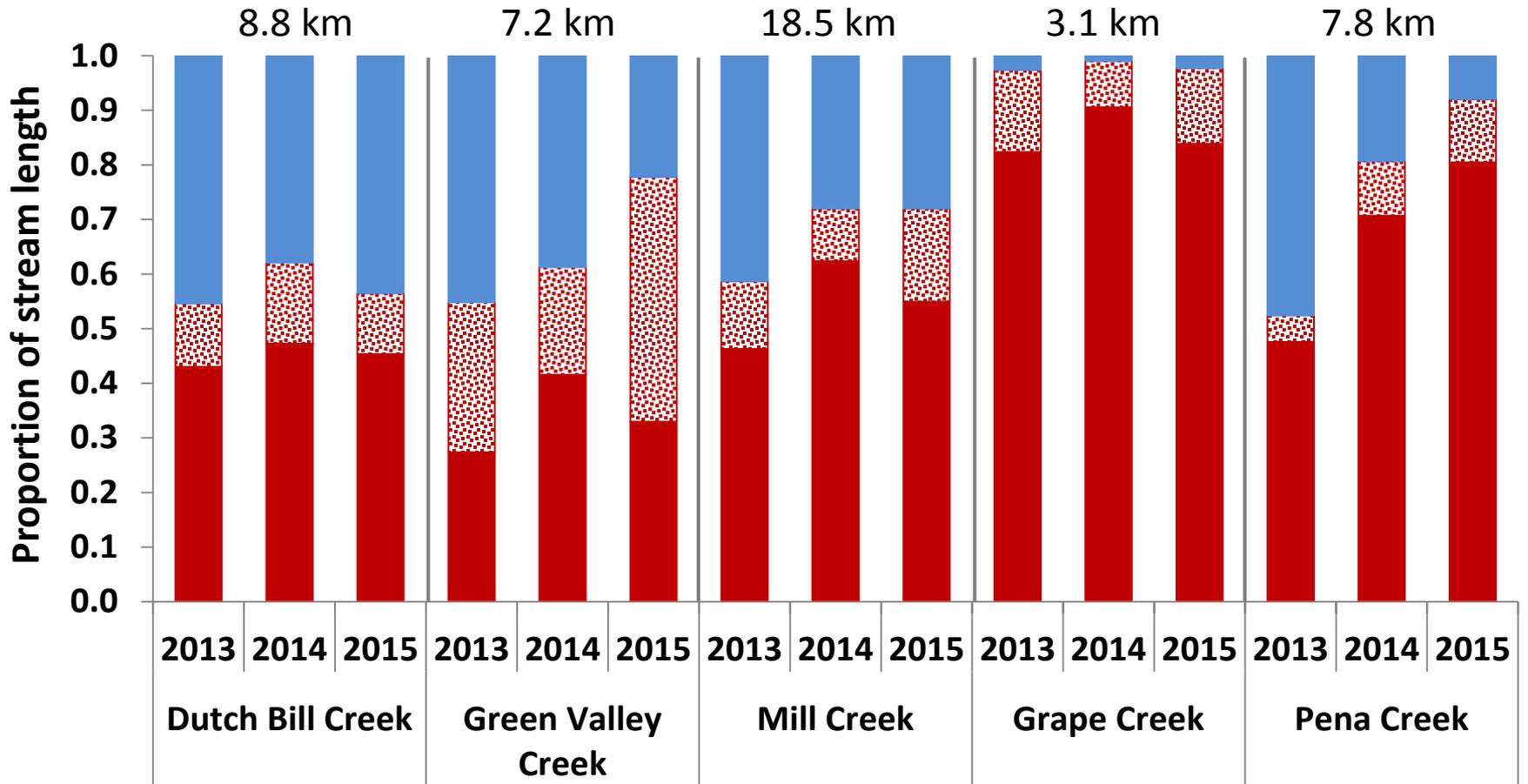
~~~~~ No Low Flow Data

0 0.5 1 Miles

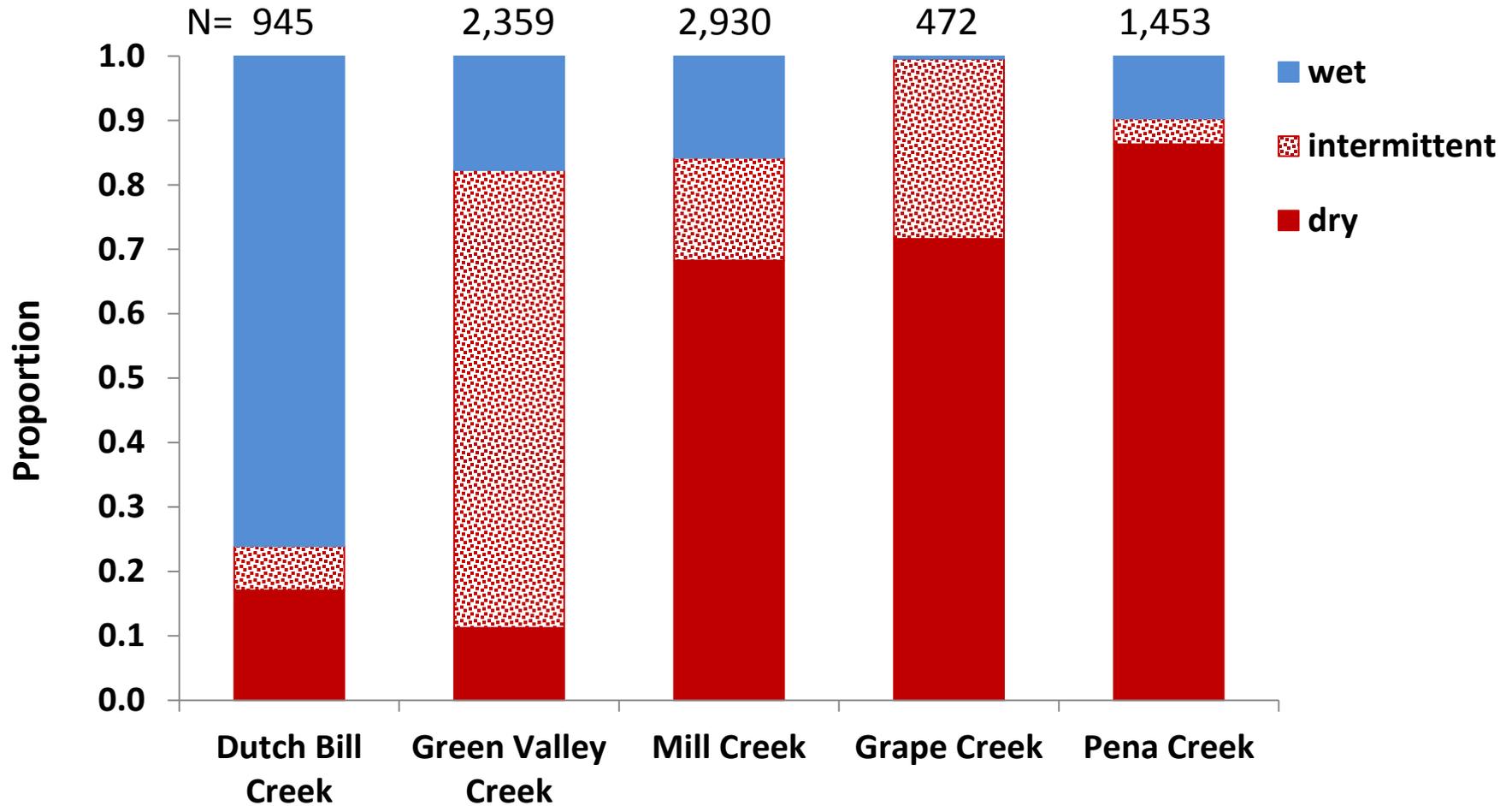
Projection: NAD 1983 UTM Zone 10N
 Source: Imagery and DEM Hillshade (University of Maryland-Sonoma Co. Veg. Map), Streams Layer (County of Sonoma)
 Map Prepared By: Andrew Bartshire, California Sea Grant
 Map Name: LowFlow_SS_SN_Template Date Printed: 10 20 15

Wetted habitat conditions in Russian River streams, 2013-2015

- wet
- intermittent
- dry



Proportion of summer juvenile salmonid observations in relation to wetted habitat condition in early September



Conclusions

- Conservation Measures can make a difference and the addition of flow enhancement projects from a few exceptional volunteers can make a **big** difference
 - Only a small amount of water can be the difference between life and death for coho salmon
 - 45 gpm = 0.1 cfs, 3 month total = 18 acre-feet
- But, the restoration and **conservation of functional ecosystems** is a more effective and reliable long term solution
 - Springs and seeps are the natural source of summer flows
 - Summer flows are a critical lifeline for the salmonid life-cycle
- VDI's have been a tremendous complement to the Emergency Regulations
 - But they are not likely to replace the need for **comprehensive regulation** of water uses

STILL Seeking Flow Enhancement Projects! (for 2016 and beyond)

**3 acre feet
is enough to
keep a Creek
wetted for
almost one
whole month.**



Please come talk to me if you are interested in releasing your stored water for flow enhancement!

“Flow for Fish” Rebate Program

Without the “Fish for Flow” program, none of the Flow Enhancement Projects could have been implemented this summer.

Thank you Jackson Family Winery for your original \$20,000 donation and
for an additional \$20,000 for 2016!!!



It's not over yet!!



- Please contact Mary Ann King if you'd like to donate equipment or time, and/or provide financial support

mking@tu.org or (510) 649-9987



Corinne Gray
CDFW Bay Delta Region
707-944-5526 corinne.gray@wildlife.ca.gov



Update on Water Rights and Fisheries Management Actions in the Russian River Watershed

North Coast Regional Water Quality Control Board Meeting
January 28, 2016

Dan Schultz
Dan Worth
Division of Water Rights
State Water Resources Control Board



Presentation Outline

- Overview of the Russian River Tributaries Emergency Regulation
- Overview of Information Submitted in Response to the Informational Order
- Potential Short Term Actions
- Long Term Actions – California Water Action Plan

Russian River Tributaries Emergency Regulation

- Effective Date: **July 6, 2015 – April 1, 2016 (270 days)**
- Applies to four Russian River tributary watersheds:
 - Dutch Bill Creek
 - Green Valley Creek
 - Mark West Creek (portions of)
 - Mill Creek
- Two components (similar to other drought emergency regulations adopted by the State Water Board):
 - Enhanced Water Conservation Measures (currently applies only to critical areas of four watersheds)
 - Informational Order (required for entire area of four watersheds)

Outreach Meetings

- Five July Outreach Meetings
 - Overview of Emergency Regulation and Resources
 - Who is impacted and how
 - July 6-9, 2015 (Occidental, Healdsburg, Forestville, Santa Rosa)
 - Estimate **700-900** people attended
- Follow Up Meeting- November 2, 2015
 - Status of Conservation Measures and Effectiveness
 - Preliminary Results of Information Order
 - Estimate 60 people attended

Informational Order Timeline and Response Rates

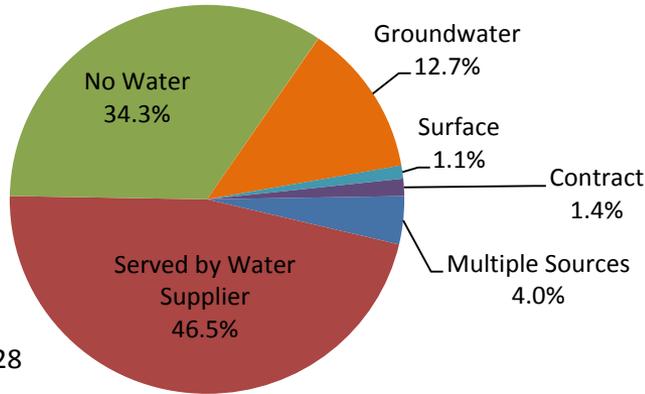
- Information Order Issued (12,325 Parcels/ Purveyors):
 - Mailed August 26 - September 18, 2015
 - Last Response Due October 23, 2015 (30 days after receipt)
 - Response Rate= ~50%
- Information Order Reminder (5,938 Parcels/ Purveyors):
 - Mailed October 28-30, 2015
 - Total Response Rate= ~80% (December 13, 2015)
- Administrative Civil Liability Complaint (1,881 Parcels/ Purveyors):
 - Mailed December 15, 2015 via Certified Mail
 - 20 days from receipt to respond (ongoing)
 - Total Response Rate= ~ 90% (January 21, 2016)
- Ownership Changes and Special Cases: Ongoing

Preliminary Results: Water Sources by Parcel

Based on response data as of 1/11/2016.

Dutch Bill Creek Watershed

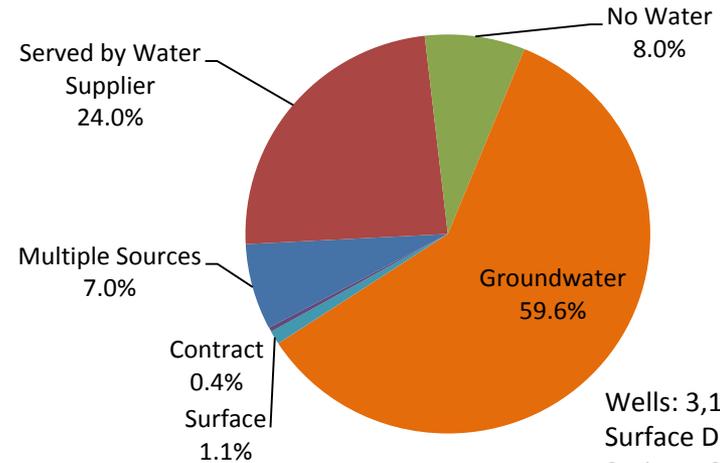
Total Reporting Parcels = 1,197



Wells: 154
Surface Diversions: 28
Springs: 9

Green Valley Creek Watershed

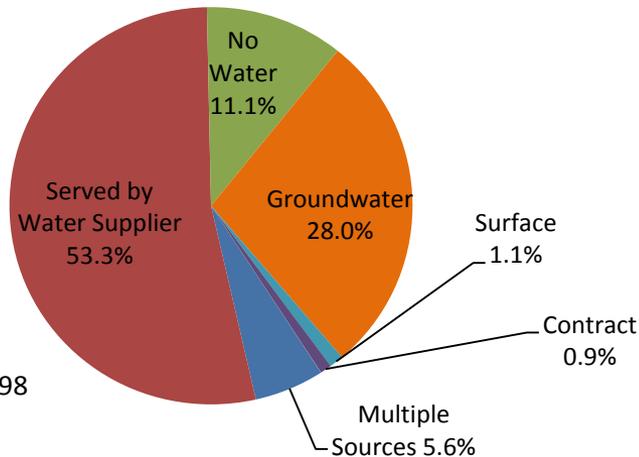
Total Reporting Parcels = 5,134



Wells: 3,174
Surface Diversions: 169
Springs: 69

Mark West Creek Watershed

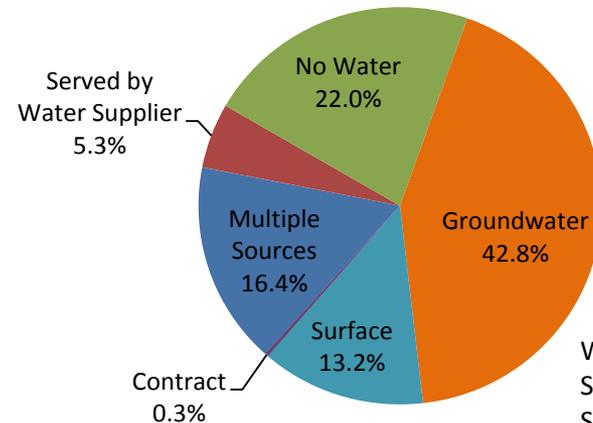
Total Reporting Parcels = 4,303



Wells: 3,174
Surface Diversions: 98
Springs: 34

Mill Creek Watershed

Total Reporting Parcels = 304



Wells: 139
Surface Diversions: 92
Springs: 36

Next Steps: Short-term Actions related to Emergency Regulations

- Complete Information Order Data Collection
 - 1,223 “missing” responses as of January 21, 2016
- Quality Control Submitted Data and Follow up
- Preliminary Data Analysis
- Evaluation of Precipitation and Streamflow data
- Re-adoption of Emergency Regulation to State Water Board (March 2016)

California Water Action Plan

January 22, 2014

- Developed at direction of Governor Brown by:
 - California Department of Food and Agriculture
 - California Environmental Protection Agency
 - California Natural Resources Agency
- Plan will guide state efforts to:
 - Enhance water supply reliability
 - Restore damaged and destroyed ecosystems
 - Improve resilience of California's infrastructure
- Outlines California's near- and long-term water priorities, including drought

Action 4 – Protect and Restore Important Ecosystems

Sub-action: Enhance Water Flows in Stream Systems Statewide

“The State Water Resources Control Board and the Department of Fish and Wildlife will implement a suite of individual and coordinated administrative efforts to enhance flows statewide in at least five stream systems that support critical habitat for anadromous fish. These actions include developing defensible, cost-effective, and time-sensitive approaches to establish instream flows using sound science and a transparent public process. When developing and implementing this action, the State Water Resources Control Board and the Department of Fish and Wildlife will consider their public trust responsibility and existing statutory authorities such as maintaining fish in good condition.”

Watersheds Identified

- **Mark West Creek**, tributary to the Russian River, Sonoma County
- **Mill Creek**, tributary to the Sacramento River, Shasta and Tehama Counties
- **Shasta River**, tributary to the Klamath River, Siskiyou County
- **South Fork Eel River**, tributary to the Eel River, Humboldt and Mendocino Counties
- **Ventura River**, Santa Barbara and Ventura Counties

Actions To Date or Underway

- Held meetings with regional and headquarters staff in four of five watersheds
- Developing contracts for:
 - Hydrology and groundwater modeling
 - Water rights evaluation tools
- Identifying gauging needs
- Compiling and evaluating existing information

Region 1 Watersheds: Mark West Creek, South Fork Eel River, and Shasta River

- Held two public outreach workshops in the Russian River Watershed on water and fish
- Working to establish USGS contract for a groundwater-surface water interaction model for entire Russian River Watershed (identified as medium priority under SGMA)
 - Joint effort between Sonoma County Water Agency, State Water Board, and potentially others that would like to participate

- **Russian River Tributaries Emergency Regulation**
 - http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/water_action_russianriver.shtml
- **California Water Action Plan – Enhance Water Flows in Stream Systems Statewide**
 - http://www.waterboards.ca.gov/waterrights/water_issues/programs/instream_flows/cwap_enhancing/#heading
- **Email List Subscription Form**
 - http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml